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JUNE 1958



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The dairy industry in transition
More top grade beef goes to market
The scope of AMS marketing research

AGRICULTURAL MARKETING SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

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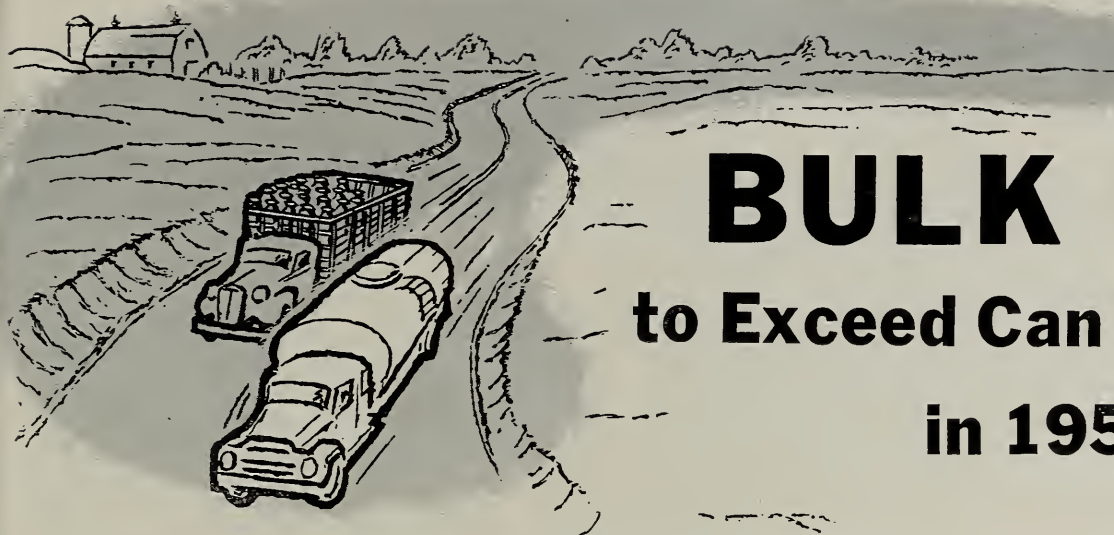
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BULK MILK

to Exceed Can Shipments

in 1958

by **ELLEN A. HENDERSON**

SOME TIME this year—if not already—bulk milk deliveries will surpass can deliveries in the total market receipts of the Federal order markets. This prediction is based on a survey made by the Dairy Division of AMS in 67 of the 68 markets where Federal milk orders were effective in January this year.

Forty-seven percent of total market receipts of milk in these areas in 1957 came from farms using bulk equipment. During the past year, the shift from can to bulk tank deliveries represented 14 percent of total market receipts. In 1956, a comparable group of markets had shown a 17-percent shift. If this trend continues, bulk deliveries will reach 50 percent some time in 1958.

Most farmers change to bulk cooling by choice. But sometimes their markets for can milk simply disappear. Once a buyer begins receiving bulk deliveries, he usually tries to eliminate all can-receiving facilities.

In two markets covered by the survey, Southeastern Florida and Cedar Rapids-Iowa City, Iowa, all market receipts of milk came from farm bulk tanks. In 7 other markets, more than 90 percent was delivered from bulk tanks. In 30 of the 67 markets re-

porting, more than half the total market receipts of milk came from producers who had bulk tanks.

Many producers or handlers about to replace or expand their equipment have found conversion to the bulk system a relatively easy choice to make. But when producers in an area shift to bulk to the extent that hauling rates for cans become prohibitive and buyers are no longer interested in can milk, the choice for the remaining producers may be more painful—get a bulk tank or quit dairying.

The time to make this decision has been short in many areas. A survey in January 1956 showed no bulk tanks supplying the Omaha-Lincoln-Council Bluffs market, but in January 1958, 83 percent of market receipts were from farm tanks. In the same period, the number of producers supplying that market dropped by 560, or 21 percent. In St. Louis, Louisville, and Eastern South Dakota markets, nearly two-thirds of the entire market supply shifted from can to bulk delivery in the 2-year period.

The average daily delivery of milk per producer who used bulk cooling equipment in the 67 markets was nearly twice the average delivery by can.

In 52 of the markets the average for bulk cooling was over 600 pounds per day, per producer. Only 3 markets reported an average can shipment as large as this; 30 markets had

an average daily delivery per can shipper of under 400 pounds. In no market did the average daily delivery per producer using bulk equipment fall below 400 pounds.

Apparently, producers who deliver less than 5 ten-gallon cans per day tend to remain can shippers, whereas producers delivering the equivalent of 7 cans or more are likely to shift to bulk equipment.

Various incentives to make the shift from can to bulk delivery of milk have been offered to producers. In most areas, some financial inducement in the form of reduced hauling cost or a premium price was offered. Premiums varied in amount, with 10 to 15 cents the most common rates. Bulk hauling charges, where they were below can rates, were 5 to 10 cents per hundredweight lower.

Purchasing and financing assistance in acquiring bulk tanks were provided in many areas by cooperative associations of producers or by milk buyers. These incentives undoubtedly have prompted a faster conversion to bulk tank use.

Market administrators report that further expansion of bulk milk handling will depend mainly upon the number of additional handlers who make the switch. Also, most buyers who are now purchasing milk in bulk are likely to encourage conversion to the point where they will no longer receive any milk in cans.

The author is a marketing specialist in the Dairy Division of AMS.



The Dairy Industry in

This is the first in a series of articles describing the many changes that are underway in the dairy industry of the United States. This month's article discusses the impact of these changes on the production and marketing of dairy products. In July, Mr. Kriesel will explain the region-to-region shifts in dairy production and utilization; in August, he will show how these changes have affected processors and distributors.

SOME of the most striking changes in the marketing of agricultural products since World War II have occurred in the dairy industry. Although not particularly significant in the overall trends in production and consumption, these changes have far-reaching implications for everybody concerned with the dairy business.

Dairy farming, for instance, has become more specialized and more commercial.

The increased specialization can be seen in the declining number of farms with milk cows. Each year, 4 or 5 percent of the farms in this country quit keeping milk cows. At the same time, however, the total number of milk cows on farms has declined an average of only 1 percent a year. Despite this decrease, production per cow has risen enough so that total production has increased.

The increased commercialization of dairying can be noted in the gradual boost in milk marketing. Dairy farmers today sell about 90 percent of their milk output, whereas in the mid-1920's they marketed only about 75 percent. In other words, farmers used

to use one-fourth of their milk output for home consumption and animal feed; today, only 10 percent.

Since these figures use milk fat as the common denominator, they do not take into account the big increase in farm sales of the nonfat component of milk. Dairy farmers now sell only about 10 percent of their total milk marketings in the form of separated cream. Cream sales in the 1920's and early 1930's amounted to 33 percent.

The importance of milk and cream retailed by farmers and the sales of farm-churned butter also have declined over the years. Furthermore, farmers themselves are using less of the milk they produce. This partly reflects the decline in number of households that keep milk cows and the shift away from churning butter for farm use.

What has encouraged farmers to shift from the sale of cream to whole milk? First of all, there were technological advantages. Improved facilities for preserving and handling whole milk—particularly with bulk milk tanks—have allowed the dairy farmer to increase his production volume. Also, he is finding it profitable to spend more time on other phases of his farming enterprise; thus, he has less available time for separating milk.

Economic advantages also persuaded many farmers to shift to the sale of whole milk. Farmers receive a higher return if they sell whole milk instead of selling only butterfat and then feeding the skimmed milk to their livestock.

Because of the increase in sales of whole milk, about three-fourths of the total output of nonfat milk solids in

recent years has been used for food compared with a little more than half 30 years ago. Not only has the use of nonfat dry milk itself increased, but more solids-not-fat is being consumed in other dairy products. Out of all this has come an improved level of nutrition for the consumer, increased cash receipts for the dairyman, and a larger total volume for handlers and processors.

The pattern of milk utilization, however, depends mainly on the tastes and preferences of the American consumer. As these preferences shift among the various products, price relationships are altered and the pattern of utilization of the Nation's milk supply shifts.

Recent trends in butter output and consumption are an outstanding example of the role played by the consumer. In the past 15 years, per capita use of butter in the United States has declined markedly. Average per capita consumption in 1935-39 was 17 pounds; today it's somewhere between 8 and 9 pounds. As a result, the proportion of milk used for butter manufacture has declined sharply from 40 to 25 percent of all milk sold by farmers.

Manufacture of evaporated milk in recent years has declined following a long period of general increase. Today, about 5 percent of the milk sold by farmers goes for evaporated. In 1945 this use was at a wartime peak of 8.3 percent. In the mid-1920's and early 1930's, evaporated milk accounted for about 4 percent of all milk sold.

The amount of milk used in the manufacture of cheese and frozen dairy products has increased consid-

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TRANSITION

erably in the past 30 years. These two groups of dairy products now take about 20 percent of all milk sold by farmers, compared with about 12 percent in the mid-1920's.

Not all of these changes have come about as a result of consumer demand. Two other factors also play a part in determining the pattern of milk utilization. These are the Government price support program and other special measures such as our export program during World War II.

Obviously, a sizable increase in export of one dairy item tends to increase the production of that item in comparison with other dairy products. The price support program, on the other hand, affects milk utilization by removing most of the surplus milk through its purchases of butter, American cheese, and nonfat dry milk.

Under its price support program, the Government has purchased in the past three years between 4 and 5 percent of the total milk fat produced on farms. It also purchased between 5 and 8 percent of total output of nonfat solids. But because the surplus was channeled wholly to butter, American cheese, and nonfat dry milk, Government purchases were equivalent to the following percentages of production of these items: butter, 12 percent; American cheese, 24 percent; and nonfat dry milk solids, 48 percent.

The rate of change in the whole pattern of milk utilization seems to have slowed down considerably in recent years, but there is no reason to expect that the overall change will cease entirely. Conceivably, significant technological innovations could set off a new series of adjustments.



Nowadays, not many farmers milk out-of-doors, and few separate milk on the farm.

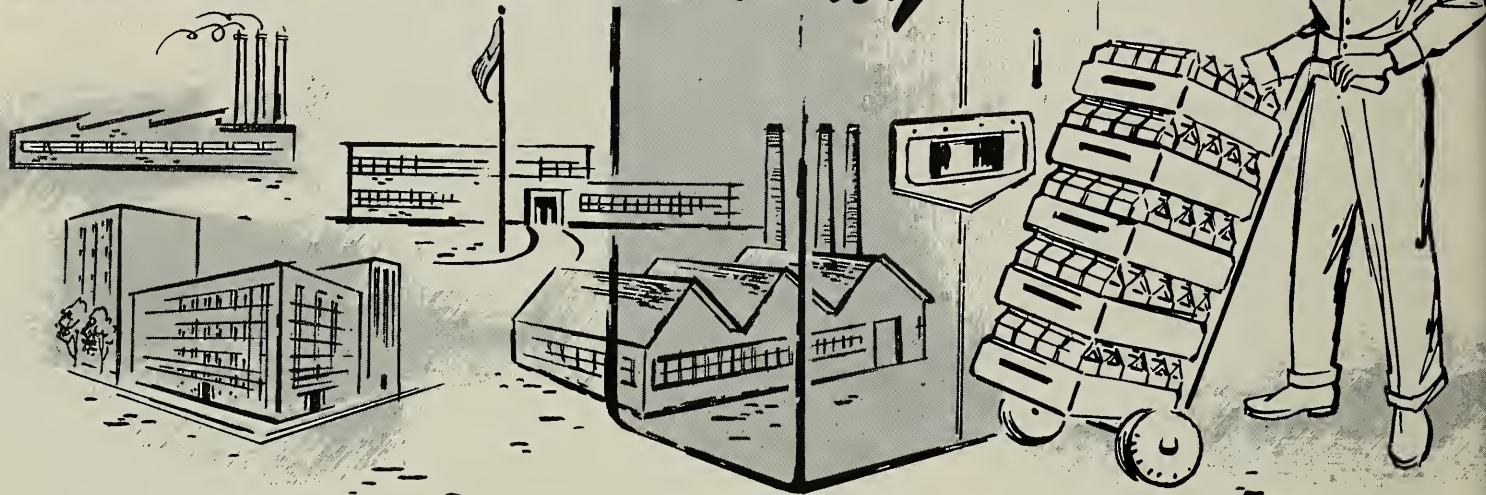


Improved facilities for preserving and handling whole milk have brought a lot of changes to the dairy industry. Bulk tanks have led to an increase in per farm production and the sale of whole milk. At the processing plant, large-capacity separators do the job of separating cream from whole milk.



SINCE WORLD WAR II, DAIRY FARMING IN U. S. HAS BECOME MORE SPECIALIZED, MORE COMMERCIAL.

MECHANICAL MILKMEN MUST WORK TO *Pay*



by JACK E. KLEIN

TO MAKE a milk vending machine route profitable, a high level of sales volume must be maintained in all of the machines on the route.

According to a study made recently in Martinsburg, W. Va., Agricultural Marketing Service economists found that a route servicing 30 indoor vending machines would just about break even if 1,538 half pints of dairy products were sold daily.

But not until this breakeven point is reached, and the more or less fixed costs of the vending operation are taken care of, does the route begin to show a profit. Returns then increase right along with the volume of sales.

Sales of 3,000 units, for instance, would earn the distributor a net return of \$33.50; 6,000 units would bring in \$103.

Two of the biggest items on the expense sheet of any vending operation are truck costs and the maintenance and depreciation of machines. Regardless of the number of units sold per machine, both of these expenses remain constant. They ac-

count for about 63 percent of all operating costs.

Another large operational item is location rental. Usually, vending machines are rented on a commission basis at 1 cent per unit of dairy product sold. This location rental—together with certain labor costs that also increase with each additional unit sold—is the only variable cost in operating a vending machine route.

All of these operating costs could be reduced and net returns increased substantially by every-other-day instead of daily servicing where this is practical. Because driving represents a large portion of the operating costs, a well planned route is essential to an economical operation. With careful routing, a lot of extra mileage and driving time can be eliminated.

Location, however, is the big factor in determining the sales volume of a machine. A good sales point should not be sacrificed for a more efficient route. The marketing research study in Martinsburg showed that industrial plants, schools, and office buildings are the best spots for indoor vending machines. Apartment houses and filling stations might also be good locations.

The question then remains: Which of the many dairy products are the most profitable to stock in these machines? In Martinsburg, with the particular prices and preferences that exist there, it was better to stock three items—homogenized milk, chocolate milk, and dairy orangeade, all in half pint containers. The breakeven point for a vending machine with these three products was lower than when only milk and chocolate milk were handled.

For example, the addition of half pints of dairy orangeade in machines already vending half pints of chocolate and homogenized milk would need to sell only 1,133 units (instead of 1,538) to break even.

An outdoor vending machine route in Martinsburg would need daily sales of 1,250 quarts of milk to break even. For a 17 machine route—about all that could be handled in a 7-hour day—this would mean an average of 75 quarts per machine.

A mixed route, servicing 5 outdoor and 16 indoor machines under Martinsburg conditions, would have as a breakeven point 97 quarts and 291 half pints of fresh whole milk and 1,067 half pints of chocolate milk.

The author is a staff member of the Marketing Research Division of AMS. He is now stationed at Berkeley, Calif.

THE HOUSEHOLD MARKET FOR BUTTER

From a nationwide sample of 6,000 families, economists in

AMS chart the pattern for household purchases of butter.

Data show gain in volume but drop in per capita purchases.

by RUSSELL L. HAWES

THE DAIRY industry wants to know—What is the size of the household market for butter? Is it increasing? Who are butter's best customers? Where do they live? What is their income, their occupation, the size of their families?

Agricultural Marketing Service is helping the industry find the answers—

Household purchases of butter have declined in recent years, mainly because of the growing use of colored margarine. In 1947, 60 percent of the "table spreads" sold was butter; in 1957 and during most of the past few years, butter has accounted for about 40 percent.

Who are butter's best customers? High-income families with 1 or 2 members, no children, and a housewife 45 years of age or older. The family head is most likely to be a professional man or business executive, but he may be a clerk, a salesman or a repair man. Probably the family lives in a big city in the North Central or Northeastern States.

The basic information for these answers comes from a nationwide sample of 6,000 households who regularly supply purchase data to a private research organization which in turn provides the Market Development Branch of AMS with the information.

From the reports of this consumer panel, AMS economists chart the pattern of household purchases of butter. They can see, for example, how butter sales have failed to keep pace

with the growth in population. Although statistics for April-September 1957 showed a 1-percent gain in volume over the corresponding period in 1956, per capita buying went down 1 percent. Comparing July 1957-February 1958 per capita purchases of butter with the 1956-57 period, they found a drop of nearly 3 percent.

On a per person basis, household purchases of butter vary directly with income. During April-September 1957, upper-income families bought a little over 3 pounds of butter per person compared with 2.2 pounds by lower and lower-middle income families.

Households with 1 or 2 members and families without children bought the most butter—over 3.6 pounds per person. Per capita buying seems to go down as family size increases. Also, families with young children tend to buy less butter than those with teenagers.

There was also a marked difference

in butter purchases made by city and rural families. People living in big cities bought an average of 3.4 pounds of butter per person while those in small towns and on farms bought less than 2 pounds.

Occupation, however, provided the most interesting and unexpected change. For the first time since the consumer series began, butter was purchased by a larger proportion of families in the clerical-sales-service employment group than in any other group. Sixty-six percent of the clerical-sales-service families bought butter between April and September 1957; only 62 percent in the corresponding period the year before.

More important, the proportion of buying families of professional or executive standing dropped 11 percentage points during this same period—from 71 to 60 percent. Also, not as many retired people bought butter in the mid-months of 1957 as a year earlier.

Butter's best customers are in the high-income group, families with 1 or 2 members, no children, a housewife 45 years of age or older. Most likely the head of the family is a professional man.



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The Scope of Ar

PROGRESS in farming is dependent on progress in marketing. The specialized Georgia broiler producer, the large-scale Arizona lettuce shipper, the Aroostook County, Me., potato grower and the Yakima, Wash., apple grower, the Montana wheat rancher, the Texas cattleman could not exist without ready access to markets and services equally as specialized as their own methods of farming.

Marketing agents sufficiently diverse to handle over 200 different farm products shipped in carlot quantities are necessary to take the farmers' output from every State in the Union to local, national, and world markets. Many types of market agents are needed to transport, process, warehouse, wholesale and retail these products, hardly any two of which follow the same course from farm to consumer.

Every product, every marketing service presents problems of its own. Few of the literally hundreds of

thousands of independent marketing firms, employing over 5 million people, can afford research to deal with their problems.

At times, whole systems of marketing have to be altered as farmers change their methods, places, and volumes of production and consumers change their habits of living. One firm cannot make the change by itself; it takes the coordinated effort of many firms to do it.

Similarly, one scientist can't analyze all the problems. Numerous specialists, ranging from entomologists to psychologists, are called upon to help find the answers. Research in the U.S. Department of Agriculture endeavors to bring to marketing the same varied scientific approaches as have proved so beneficial to farmers over the past century.

Nearly 500 projects currently conducted by the Marketing Research Division of the Agricultural Marketing Service are aimed at solving some

In Washington, D. C., and in field stations across the country, employees of the Marketing Research Division of AMS are seeking ways to bring our abundant farm production to market in better condition and at less cost. These men are chemists, horticulturists, bacteriologists, physiologists, pathologists, entomologists, botanists, engineers, economists, statisticians, and marketing specialists. Their work covers the fields of market organization and costs, market development, product quality maintenance, and transportation and facilities. Dr. Trellogan is Director of the Division.



Agricultural Marketing Research

by HARRY C. TRELOGAN

practical problem that is an obstacle to the orderly flow of farm products at some point in the marketing system. It may be how to increase storage life of grapes, how to expand the market for lamb, or an overall study of the farmer-to-consumer price spread for eggs. Whatever the project and wherever it is being conducted, it seeks to contribute to a more efficient marketing system.

For instance, an "aeration" method of conditioning grain in commercial storage could save the industry as much as \$9,000,000 a year if adopted by even half the elevator operators in this country. This method of conditioning is as good or better than the conventional "turning" method, and it does the job at about half the cost.

The new aeration process, the result of several year's study, combined the know-how and research of 13 engineers in 8 different locations across the country. Like a great deal of marketing research, it was done in co-

operation with State agricultural experiment stations and private industry.

The work of the Marketing Research Division falls into four general categories—product quality research, transportation and facilities, marketing organization and costs, and market development. Studies are made both in Washington, D.C., and in field stations scattered across the United States. Usually, the research is conducted in the field, close to the places where the particular product is delivered, stored, shipped, received, or distributed in substantial quantities.

That's why the possible use of polyethylene liners for pears was studied in the Pacific Northwest. That's where most of the pears are grown, packed, and shipped; that's where the poly liners would be put to the most use.

As a result of this study, the storage and shelf life of the fruit have been considerably increased and a better product has gone to the con-

sumer. To the Northwestern pear industry, it has meant an annual saving of about \$1 million.

This particular research project was conducted by the Biological Sciences Branch of MRD and, more precisely, by the Quality Maintenance and Improvement Section. There are 13 such Quality Maintenance and Improvement field stations, as well as 2 Quality Evaluation and 9 Stored-Product Insects field stations maintained by the Branch in 15 different States.

Overall leadership for biological research is centered in Beltsville, Md., where there are experimental storage rooms, equipment, and laboratories to study the many and varied problems of quality. Among the types of scientists engaged in product quality studies are horticulturists, chemists, bacteriologists, physiologists, entomologists, pathologists, botanists, and engineers.

Directed by W.T. Pentzer, these

scientists conduct both basic and applied research. Basic research determines underlying causes of quality deterioration; applied research uses this knowledge to avoid, prevent, or overcome the difficulties.

Unless the product reaches the consumer in good quality, financial losses are bound to occur somewhere along the marketing line. Quite a number of spoilage losses can be stopped. But first their nature and cause must be determined, and the extent of changes that take place during marketing ascertained.

AMS researchers have done extensive basic research in chilling injury to sweetpotatoes. At Beltsville, they have found this physiological breakdown is related to salt leakage from cells and the activity of mitochondria (basic particles of the cell). Chilling injury is now detected by this leakage of salts even before discoloration is evident.

Physicists have developed an instrument that "looks inside" whole fruits and vegetables. It records the amount of light that can be transmitted through a sample, and from this measurement observers can tell how mature the fruit is and whether it has any internal defects. With a few modifications, such an instrument could be put to practical use on an assembly line in a packing or processing plant.

A similar device has been developed to detect blood spots in eggs. It, too, is nearly ready for commercial application.

Both these devices would provide inspectors and graders with practical tools for objective measurement of quality factors. They would reduce the need for relying upon fallible human judgment in determining the values of the products on which the farmers' returns are so dependent.

In another phase of its research activity, the Biological Sciences Branch has developed new methods of controlling insects in stored grain. Infestation has practically been eliminated in CCC wheat stored in ships. Moreover, costs of protecting wheat from

insects in the James River and Hudson River Reserve Fleets have been cut in half.

Another group of scientists, including architects, industrial engineers, and transportation economists, are primarily concerned with the physical movement and handling of farm products enroute to city homes. They are in the Transportation and Facilities Branch where, under the direction of William C. Crow, they treat the problems confronting shippers, warehousemen, wholesalers, and retailers. The Branch also deals with the planning and construction of improved market facilities.

In brief, the job of Transportation and Facilities research is to help get farm products to and through markets with the use of less labor, capital equipment, and other resources market operators have to buy.

Beginning with the design and construction of the shipping container, as well as experimentation with especially designed vehicles (trailers, boxcars, and reefers), Transportation and Facilities research follows the product until it ends up in the display case of the supermarket. Along the way, it deals with improved facilities, work methods, plant layout, and equipment which will increase the efficiency of the numerous handling operations involved in the distribution process.

The problems are practical ones. How to rapidly cool tray-packed apples was a difficulty encountered at Wenatchee, Wash. AMS researchers solved it by designing vented fiberboard cartons with perforated trays that allowed the apples to cool in half the time required for unventilated cartons.

More efficient methods of handling cotton were developed after a study of compresses and warehouses from the Carolinas to California. This research has resulted in considerable savings in charges for receiving, storing, compressing, and shipping.

All across the country, transportation studies are constantly being made. In cooperation with the Bio-

logical Sciences Branch, a new handbook for truckers has been issued. It lists desirable temperatures and relative humidities for transporting fresh fruits and vegetables, dairy, poultry and meat products, and frozen foods.

In Philadelphia, marketing specialists have worked out new methods of displaying fresh produce in retail stores. Test installations show that by using a tray-type handling unit designed by AMS engineers, retailers can achieve greater work productivity, better merchandising, and better quality control.

Marketing researchers have helped 57 cities plan the construction of improved marketing facilities for food and farm products. Annual estimated savings in food handling costs at the new St. Louis, Mo., market have amounted to over \$500,000, and at San Antonio, Tex., over \$600,000 was saved last year. Once completed, the proposed Philadelphia wholesale food distribution center should save more than \$6 million a year in food handling costs.

Headquarters for Transportation and Facilities research are in Washington, D.C.; the Branch also has 18 field offices scattered across the country.

Still another type of research conducted by the Marketing Research Division of AMS deals with the organization of the marketing system and the business decisions faced by processing and distributing companies that make up that system.

One of the big problems in agriculture today is the increasing marketing spread—the difference between what the farmer gets for his products and what the consumer pays for them. Economists, statisticians, and commodity marketing specialists in the Market Organization and Costs Branch, under the direction of Kenneth E. Ogren, study how this spread is related to marketing processes and services. With this information, problem areas requiring research are identified and industry receives guidance indicating those phases of their operations where the adoption of improved and

more economic marketing methods may be advisable.

During the past year, 53 studies of margins, costs, and efficiency in marketing were in progress. Among the subjects covered were the costs of marketing milk and other dairy products, Western head lettuce, and the relative importance of labor in Florida citrus packinghouses. Margin studies dealt with beef and pork, lamb, poultry and eggs, Florida oranges, and the California Long White potato crop.

Many of these economic and cost analyses were carried out in the 11 field stations of the Market Organization and Costs Branch. These are located in 10 States and Hawaii. Twenty-three Land Grant schools also gather data for market organization and cost studies. A Branch field office in Berkeley, Calif., cooperates with the 11 Western States in research of regional scope.

As one part of the overall study of margins, a quarterly report was started during 1957 on the sales and costs of milk distributors. The report is based on data from some 80 distributors in the Central States. It is the first time such information has been made available, on a regular basis, to enable milk dealers to judge the comparative efficiency of their own businesses.

Last year, Market Organization and Costs economists also took a look at the effects of increased use of U.S. grades of beef. This study covered marketing practices in 15 major cities in all parts of the Nation. It has given both industry and Government new bases for understanding how acceptance of Federal grades would affect farm or consumer prices as well as marketing channels and practices.

Another study by this Branch has shown soybean oil mill operators how changing the size of their mills can affect their returns. It provides information useful to the individual operator in assessing his own situation and determining whether adoption of new methods will reduce his costs.

A fourth type of work in the Divi-

sion deals with finding more efficient ways to sell farm products. This research is conducted by the Market Development Branch under the direction of Robert M. Walsh. It is aimed at broadening markets for well-known products and finding new markets for entirely new products.

One phase of this work includes appraisals of the effectiveness of advertising, display, pricing, and other merchandising methods in expanding outlets. This work may be done through controlled experiments in a sample of matched retail stores in one or more cities.

Another phase of the work involves studies of buyers' preferences. Surveys measure the market potential of a particular item, show where there is room for development and promotion, where acceptance is most favorable and why, and what commodity characteristics consumers prefer or dislike.

AMS researchers recently analyzed a nationwide survey of teenage girls and their mothers to find out what they did and didn't like about cotton garments in their wardrobes. In another survey, men were asked what fibers they liked best for shirts, slacks, and suits. Preferred fabrics and fibers for passenger cars and for household furnishings were the subjects of two other surveys. This information is useful to the cotton and wool industries in identifying opportunities for expanding outlets for these important agricultural products.

The Branch also works with the Agricultural Research Service Utilization Laboratories in determining the market potential of newly developed products. AMS researchers may pretest these products under normal marketing conditions.

Consumer reaction is, of course, the first consideration, but the economists are also interested in the price customers are willing to pay for the product, whether they are likely to make repeat purchases, and how much their purchases have been influenced by promotion and advertising.

Pretests also indicate what packaging, handling, and shelf life problems may be encountered.

With this information, a businessman is better prepared to estimate the market potential of the product, the nature of its competition, and the price necessary to compete successfully.

For example, dehydrofrozen peas developed at the Western Utilization Lab in Albany, Calif., were sales-tested for institutional user acceptance by Market Development personnel. The new product was rated highly acceptable, so further research was conducted to find out its economic advantages. This study showed that savings in packaging, transportation, and storage of the new, lightweight peas would amount to 2 cents a pound—over a million dollars annually if adopted by only a third of the institutional users. If, in addition, dehydrofrozen peas become a retail item, AMS economists believe the savings might run as high as \$5 million a year.

A similar market analysis program was conducted for newly developed potato flakes. A product of the Eastern Utilization Lab in Philadelphia, the flakes were tested by AMS marketing researchers at retail stores in Binghamton, Endicott, and Johnson City, N.Y.

At the Southern Utilization Lab in New Orleans, market potential studies are underway for cotton linters, acetylated cotton, and cottonseed meal for poultry and swine feed.

These research projects of the Market Development Branch, together with the projects of the three other Branches of MRD, treat problems occurring throughout agricultural marketing. If there's a less costly way to do a job, a better packaging method, a more acceptable product to be marketed or a more effective way to prevent quality loss through deterioration or insect and disease attack, MRD researchers seek to find it.

This is the purpose of the research program of AMS.



alaska..

by JACK E. KLEIN

NEW LABORATORY FOR MILK MARKETING RESEARCH

IN THE Territory of Alaska—more than 4,000 miles from Washington, D.C.—the Marketing Research Division of AMS has begun a study of milk marketing methods.

Alaska provides a unique marketing situation. Within its boundaries are found a variety of milk transportation, storage, production, and distribution facilities. These facilities are the key to competition between fresh and processed milk as well as milk produced in the Territory and milk shipped from the States. They also determine the success of the new and old forms of processed milk, such as canned whole and evaporated milk, dry milk, and frozen, concentrated, and recombined milk.

Alaska has a population of but a few hundred thousand people spread over an area roughly two-fifths the size of the United States. In Alaska, transportation facilities are good between main markets. But, between isolated communities, it is costly and service is limited. Some small outlying markets depend primarily on air transportation for supplies.

This is the big problem of the milk industry in Alaska—distribution of their products to the market areas. The extreme differences between the urban and the rural communities

mean that neither processed nor fresh milk can predominate in the total market.

Processed milk is the most logical for the more remote communities. It offers the necessary advantages of storability and light weight, yet it also must be acceptable for fluid purposes.

Fishing boats depend on canned whole or evaporated milk. Outlying communities and remote hunting, lumbering and mining camps use a lot of evaporated and powdered milk.

Fresh fluid milk, of course, dominates the city markets, with both home deliveries and grocery store supplies available. Some of the cities, such as Anchorage, get their fresh milk from local dairies. Others, like Ketchikan in the southernmost part of the Territory, usually depend on supplies from Seattle. Still other cities get their fresh milk from both sources—local dairies and the States.

The supply of local milk, however, hinges on the availability of sufficient cleared and tillable land to produce the necessary hay, silage, and bedding for dairy herds. Most of the feed concentrates come from "Stateside" sources. Production of grain is difficult because the rainy season and the harvest season coincide.

Construction of grain elevators and driers would do much to encourage grain production in Alaska. In turn,

they would reduce the dairyman's dependence on outside sources for concentrate feed and stimulate dairying and local milk production.

But there still remains the problem of transportation. Transportation costs are high. So high, in fact, that they provide the key for pricing fluid milk in Alaska.

The cost of transportation amounts to a fifth or a third of the retail price, depending on the product and where it is sold. The minimum selling price for locally produced fluid milk, for instance, is the same as the price of milk in the nearest U.S. supply point plus its transportation charges.

But transportation itself is a two-way variable in the competition for the milk market. Rates have gone up in the past few years, but methods of shipping milk have become more efficient, thereby reducing the overall cost and cutting down on the risk of spoilage and pilferage.

All in all, the changing pattern of the fresh milk market in Alaska should provide the dairy industry with valuable contrasts in marketing costs and practices, pointing the way to more efficient methods of production and sales. The extreme differences between the urban centers and the small, far-flung communities should provide ideal conditions for studying sales of processed milks.

Jack E. Klein is an agricultural economist in the Berkeley, Calif., office of the Market Organization and Costs Branch, Marketing Research Division, AMS.

MORE TOP-GRADE **BEEF** GOES TO MARKET

by EARL E. MILLER

UNITED STATES consumers have not only eaten more beef in the last few years than ever before, they have also eaten a better grade of beef, according to the Agricultural Economics Division of AMS.

In 1956, about 58 percent of all beef consumed was of the top 3 grades—Prime, Choice, and Good. Earlier, around 50 percent of the beef supply had been in these grades.

Consumers, producers, and marketers have contributed to this up-grading. Consumers have asked for and have been able to pay for quality beef. Producers have adjusted their output to fill these requirements. The marketing system has done a good job of reflecting consumer demands as well as encouraging consumption of these top grades.

As consumers' incomes increased in recent years, their demand for beef also increased, but their demand for the better grades increased even more. The more expensive cuts and preferred grades are especially popular when shoppers have more money.

Demand has centered particularly on the Good and Choice grades. These grades are from young cattle whose

carcasses have liberal quantities of fat, adding to the tenderness and flavor of the meat. Increased distribution at retail by grade, both Federal and private, and the growth of self-service retailing has raised the demand for these grades. Objections to too much fat have taken some of the popularity from the Prime grade.

Naturally, consumers can't have high-grade meat to eat unless the cattle industry produces it. And, the industry has done just that. It has done so in three ways: By feeding more cattle before they are slaughtered; by raising more calves to maturity, thereby lifting the proportion of steer and heifer beef in the total supply; and by turning more and more to beef-type animals.

Giving steers and heifers an intensive feeding on grain or other concentrate just before slaughter not only gives the carcass a finish, a tenderness and flavor that most consumers like, but also increases total beef output. In recent years, 60 percent or more of our steer and heifer beef has come from animals that have had a turn in the feed lot. A very small part of cow beef is fed—2 to 3 percent.

The practice of saving more calves for maturity instead of slaughtering them as calves has provided more animals for feeding. In the last few

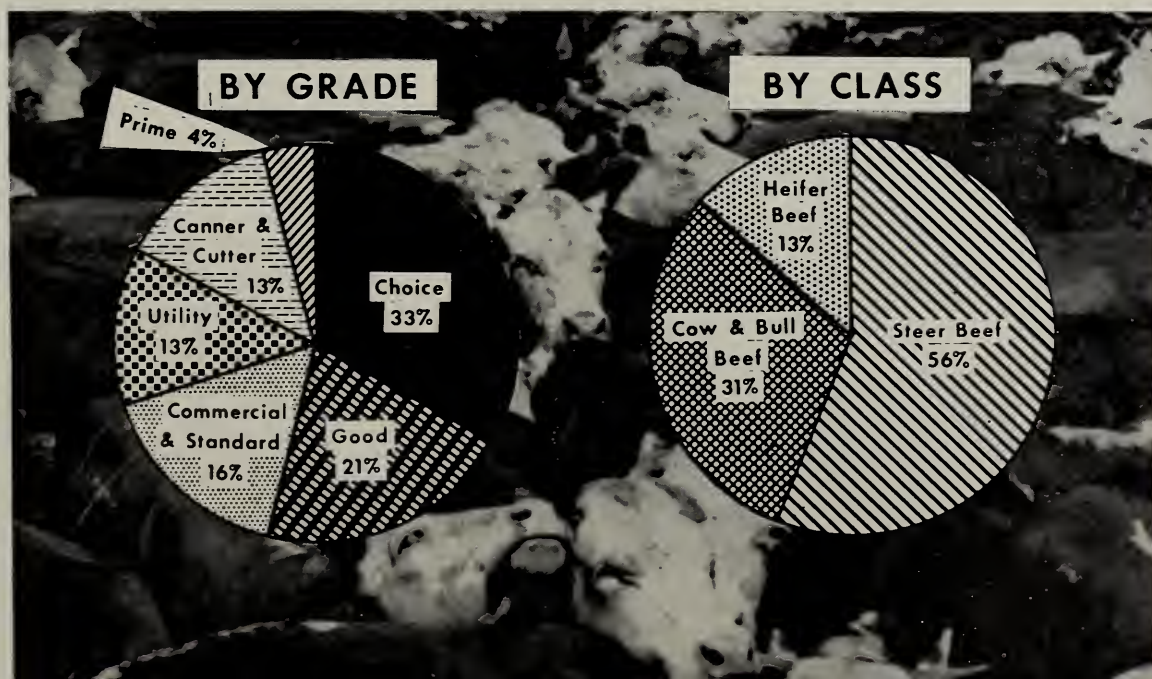
years when total cattle and calf slaughter was cyclically high, the proportion of calves in the total was unusually low.

Also aiding these trends was the slow shift to beef cattle and away from dairy stock. Our milk supply is being produced from fewer and fewer cows. This means that fewer Canner and Cutter cows are available for slaughter. Since 1949, as total cattle numbers advanced to a 1956 high, the gain was entirely in beef cattle. Even since 1956, when total cattle numbers have declined, beef cattle numbers have held up better than milk cattle inventories. Milk cattle as a proportion of all cattle on farms declined from 46 to 36 percent between 1949 and 1958.

Merchandisers have stimulated expanded outlets for high grade beef. Featuring U.S. Choice (or Good) grade, or its equivalent, has certainly called consumers' attention to a high-grade product. Self-service display has had a differential benefit for higher grades, which display more attractively and hold their bloom better than lower grades.

And if you'd like more statistics on the beef supply, about 56 percent of the beef eaten in 1956 was steer beef, 13 percent heifer, and 31 percent cow beef.

BEEF PRODUCTION BY CLASS AND BY GRADE, 1956



USING FOOD SURPLUSES IN

by JAMES A. HUTCHINS, JR.

OUR good neighbor continent—South America—is one of the largest recipients of the aid afforded by USDA's direct distribution program. In 1957, a total of 56,000,000 pounds of surplus foods was shipped by the Agricultural Marketing Service to aid the needy of South American countries. Shipments this year are being made at twice that rate.

That may seem strange to you, if you think of South America as a land of rich natural resources, booming oil-lands, sleek modern buildings.

It is all these things, but it is, too, a land of sharp contrasts. Amid these signs of plenty, there exists much poverty.

Early this year, I journeyed down the west coast of South America, across mid-continent, and back up the east coast. This was one of the tours of inspection that we make to look into the operation of the direct distribution program in the 78 countries

around the world to which it now extends.

The trip, of course, was by airplane—a mode of travel that accentuates the contrast between nature's richness and man's poverty.

My introduction to this contrast came speedily at my first stop, Colombia. From the air, this was a land of striking natural beauty, towering mountains rising out of verdant plateaus.

But in Bogota, I found a scene that I was to witness many more times: In the city, a short distance from towering new skyscrapers were sprawling slum areas—areas I came to know by their native names: *favellas* (slums) and *callampas* (mushroom).

These were the areas where the city's poor lived, largely by squatter's right. In Bogota, these areas sprawled down in the bed of the river—land available to the poor because nobody else wanted it. For, when the river swelled periodically in its banks, the shacks they had thrown together were

inundated—many of them were swept away.

At the opposite extreme, Rio de Janeiro had *favellas* and *callampas* built high in the hills overlooking the city, in locations that commanded a breathtaking view. But these were lands that no one else wanted, too, for water is precious in South America, and there is none high in the hills. Others had left these lands to the poor, who accepted as their lot the long weary climb from the water spouts in the valleys up to their shacks in the hills.

The shacks of the poor were built of anything they could acquire—pieces of tin, cardboard, mud scooped from the river and hand-patted into walls.

The poverty of the poor's housing was reflected everywhere in the poverty of their diet. In Colombia, a women's committee is doing a tremendous job of using foods donated by the people of the United States, to help feed these poor. They take U.S. nonfat dry milk, and mix it with coffee donated by coffee distributors and sugar donated by sugar distributors, to make *cafe au leche*—the South American half-and-half drink. They make buns, too, from U.S. flour and dry milk.

With these, they set up feeding stations. Those who are able to find work in the city come to the feeding stations for breakfast. Those who can not find any work—fathers, mothers and children—come during the day for their rations.

In Colombia, too, distribution is made through mother-and-child centers. I found there an interesting solution to the problem we always have

Mr. Hutchins (center), Chief of the Direct Distribution Branch, Food Distribution Division, AMS, received a Superior Service Award at USDA's Honor Awards Ceremony, May 27th, for "contributing to the success of the direct distribution operations under which billions of pounds of surplus foods were used to improve diets of children and needy people here and abroad."



SOUTH AMERICA

with us—how to instruct the poor to make the most use of the donated foods. Bogota has given inexpensive radios to its poor. The radios receive only one channel—the program of the city welfare department. That department regularly broadcasts information to the mothers, including instructions on how to use the dry milk they receive.

In Quito, Ecuador, our foods help to ease the cost squeeze in a hospital where most all the patients are charity cases. They have only 30 cents (equivalent) to feed each patient each day. Understandably, they appreciate the help of the U.S. food donations.

In Lima, Peru, I visited a *callampas* built on a city dump. Little children scavenged in the dump—the children who beg, shine shoes, clean windshields, for anything you offer.

In the midst of the dump was a church which came to be the center of the community. In front of it was a well, to which the people came for water, bearing all kinds of buckets. Logically, this church-on-the-dump was the center from which our foods were distributed to the people.

Flying out to La Paz, Bolivia, we passed the towering volcano the natives call "Old Misty." It was quiet, now, emitting only a curl of smoke. But our guides recalled that U.S.-donated foods were of great assistance in feeding the victims of the earthquake that resulted, last January, when Old Misty erupted violently.

La Paz airport is high on the Alta plateau, 14,000 feet above sea level. A short drive from the airport, your car rises over the plateau's rim, and there, sparkling 1,500 feet below, is

the city.

Within La Paz, though, there is contrast again. I visited a big orphanage for boys, two for girls, and a tuberculosis sanitarium—all were feeding their children donated foods, and little else.

In Bolivia, we followed the course of donated commodities out to where they are put to work in helping the country people. We jeeped out along the main road, on to dirt roads, then off across the plains, fording creeks and streams, finally to a little village (some 100 miles into the interior) where a U.S. church group conducted a school feeding program.

The missionaries had built their settlement like an oldtime fort—a high wall surrounding the compound which included the school, a church and other essential buildings.

Most of the school children had so far to travel to school, mostly on foot, that they needed two meals a day—breakfast, as well as their noon meal. Meals included U.S.-donated milk and cheese, and a bun made from donated flour and dry milk.

In Santiago, Chile, I saw the good that was being accomplished with our food by another U.S. church group. They sought to give help particularly to the young people—the boys of 9 through 15, who had no homes and were sleeping under bridges. They invited these youngsters into their mission, fed them porridge, cheese, and milk—using U.S.-donated commodities. They gave them a place to stay for the night—with the assurance that they were free to leave whenever they chose.

Finally, I visited the largest of the South American countries, Brazil.



Hungry children in Bogota, Colombia, line up to receive U.S.-donated milk. Distribution is being made at mother-child health clinic where welfare workers reconstitute and bottle nonfat dry milk.

Here was a program, in progress, for building better housing for the poor—work that promises, in time, to raise their living standards.

But for the moment they were being helped by a feeding program that leaned heavily on our donated commodities. They called it a school lunch program—actually, the lunch consisted only of U. S. milk, U. S. cheese, and a bun made from U. S. flour and milk.

In the heart of the *favela* in Rio de Janeiro was what they called a "recreation center"—an old wooden building that was all things: an office for volunteer doctors, a milk distribution center, a dance hall on Saturday nights, a church Sunday morning.

In circumstances such as these, the donations of food by the people of the United States through voluntary U. S. agencies are badly needed and warmly welcomed by the needy of these countries. On all sides, in all the countries I visited, these poor people assured me how greatly they appreciated the kindness of our people in sharing their abundance.

Volume-Price Reporting—An Aid to Marketing

by HARRY A. RUST

VOLUME-PRICE reporting on poultry and eggs is one of the relatively new services of the AMS Dairy and Poultry Market News Service. It is also one of the most valuable.

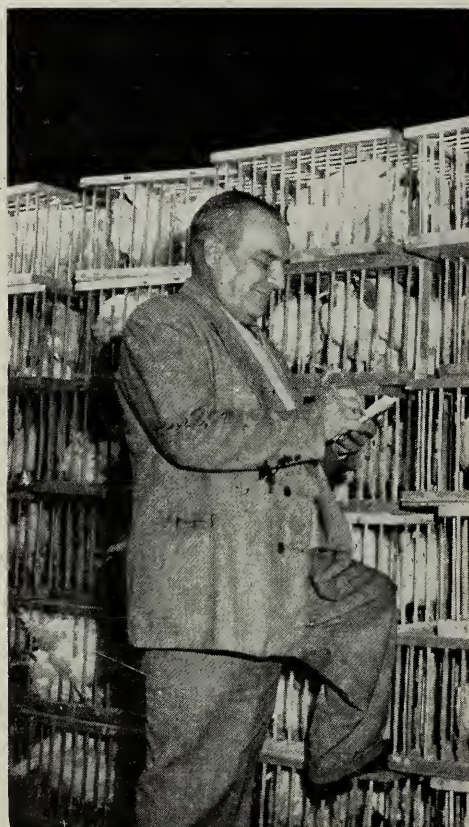
Through the volume-price reports, both the poultry and egg industries get a good overall picture of the current market. The reports supply, in addition to price ranges for sales of a product, the total volume marketed and the percentages of the total which moved at each price reported.

Begun about two years ago and initially used only for live poultry, the service has recently included reports on ready-to-cook poultry and egg trading.

In March, the Dairy and Poultry Market News Service initiated at Chicago, at the request of the local trade, the first reporting on a volume-price basis of terminal market trading in ready-to-cook poultry.

In May, two pilot reports on egg trading were begun in Atlanta, Ga., and Jackson, Miss.

These egg reports, issued daily on the previous day's receipts, cover the price and volume sold for each size, grade, and color of eggs. The Atlanta report includes the delivered price paid by first receivers (dealers and chain stores) for loose pack eggs and the volume moved at each price. The



AMS market news reporter gathers information on sales, supply, demand, and movement of poultry.

Jackson report covers the volume and prices of eggs sold to retailers.

A volume-price report on eggs could, for instance, report the sale of 395 cases of large, white eggs, minimum 80 percent Grade A, at prices ranging from 41 to 47 cents; 29 percent selling at 41 cents, 2 percent at 42 cents, 3 percent at 43 cents, 33 percent at 45½ cents, and 33 percent at 47 cents.

Obviously, presenting such a detailed report of a product marketed

in a producing area or at a terminal market takes a great deal more time and effort than the spot sampling method employed in conventional market reporting. It requires complete coverage and checking and re-checking of the figures obtained.

In addition, volume-price reporting requires the full cooperation of the trade, which must supply the reporter with the necessary sales and price figures. The recognized value of the volume-price reports has improved dealers' willingness to cooperate.

Both the poultry and egg industries have found that volume-price reports give an accurate account of the supply and demand situation. In these fast moving and changing industries, the reports provide the information needed to make major decisions on the production, processing, and distribution of their products.

The first experimental volume-price report on live poultry (broiler-fryers) was started in northern Arkansas in the Spring of 1956. No sooner had the service begun here than other producing areas sent in requests for the same kind of a report.

Now volume-price reports are issued on live broiler-fryer sales at the farm or delivered at plants, or both, for all major producing areas. The areas covered include Arkansas, Mississippi, Georgia, Florida, North Carolina, Virginia, Alabama, the Delmarva peninsula, western Pennsylvania, and the Cincinnati and Seattle areas.

The author is Chief of the Dairy and Poultry Market News Branch, AMS.